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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ROSARIO-VASQUEZ, DENNIS

ART UNIT PAPER NUMBER

2621

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18

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/940,589

Applicant(s)

INOUE ET AL.

Examiner

Dennis Rosario-Vasquez

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08/29/2011 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>4.5.8-17</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,2,8,14,15,19,21 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Murakami (US Patent 5,062,144 A).

Regarding claim 1, Murakami discloses an image-reading device comprising:

- a) a photoelectric converting element reading a first image from a subject copy.

Fig. 1, num. 5 is a CCD or photoelectric converting element reading an original image or first image from a subject copy located on plate 2 of figure 1 as mentioned in col. 3, line 60 to col. 4, line 2.

- b) a reference-white member functioning as a reference white used in a white-shading correction;

Fig. 1, num. 3 and 3a is a reference-white member functioning as a reference white used in white shading correction as mentioned in col. 3, lines 51-58 and col. 4, lines 7-9.

c) reading means for reading a second image from a constant range on a surface of said reference-white member by using said photoelectric converting element;

Fig. 1, num. 5 is a CCD reading means for reading the white reference plate 3 as a second image from a constant range using a focused lens 4 provided under the plate 2 of figure 1 as mentioned in col. 3, lines 56,57 to provide the image 3 shown in figure 2. Thus, the lens focuses on an object at a constant range.

d) averaging means for dividing image data of said second image into a plurality of blocks in a sub-scanning direction so that each of the blocks includes a plurality of lines (Figure 1, num. 16 is an adder means that uses an average as mentioned in fig. 3, step 102 for dividing image data of said second image 3 as shown in figure 2 into two blocks R_A and R_B , and obtaining average values of image data of said lines in said blocks respectively (An average is taken from each line L_{A1} , L_{A2} and L_{An} and an average is taken from L_{B1} , L_{B2} and L_{Bn} as mentioned in the steps of figure 3, numerals 101-104.);

e) peak-value determining means (Fig. 1, num. 14 is a comparator that determines a MAX and outputs the MAX.) for obtaining a peak value of said average values (The average maximum values S_c are determined using the average values as shown in the steps 105 of figure 3 and shown in equation (6) shown in col. 7, line 46.);
and

f) white-shading correcting means (Fig. 1, num. 8 is an image processor that performs white-shading correction or corrects "light values" (col. 7, line 66).) for performing the white-shading correction to image data of said first image or "original image (col. 7, line 54)" by using said peak value as white-shading data as shown by the equation (6) in col. 7, line 47 which calculates a max value.

Claim 2 is similar to claim 1 except for:

a) a scanning optical system scanning said subject copy by exposing said subject copy to light so as to form said first image on said photoelectric converting element;

A scanning optical system is shown in fig. 1, num. 1 which uses a lens 4 for scanning said subject copy or "original (col. 3, lines 47,48)" placed on 2 by exposing or projecting said original to light indicated by the dashed lines for focusing of fig. 1 and mentioned in col. 3, lines 56-60 so as to form said first image on said photoelectric converting element 5 of fig. 1 as mentioned in col. 3, lines 59,60.

Regarding claim 8, Murakami discloses the image-reading device as claimed in claim 1, wherein said averaging means obtains average values of image data of at least every second line of said lines in said blocks respectively.

Using figure 2 of Murakami, an average from line L_{A2} which is the second line in block R_A and an average from line L_{B2} which is the second line in block R_B is computed as mentioned in col. 6, lines 11-15 and 33-36.

Claim 14 has been addressed in claim 1.

Claim 15 has been addressed in claim 2.

Claims 21,31 have been addressed in claim 8.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3,6,11,12,13,16,19 and 24-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami (US Patent 5,062,144 A) in view of Yun (US Patent 6,075,623 A).

Murakami teaches the limitations of claim 3 that was addressed in claim 1 and the additional limitations of claim 3 of:

a) a subject-copy-conveying path conveying a subject copy (Murakami teaches a subject-copy-conveying path as shown by the arrow in the negative x direction as shown in figure 1 conveying a subject copy or original placed on plate 2 as mentioned from col. 3, line 65 to col. 4, line 2.);

b) a photoelectric converting element placed on said subject-copy-conveying path so as to read a first image from a surface of said subject copy (A photoelectric converting element 5 is placed underneath the subject-copy-conveying path as shown by the arrow in the negative x direction so as to read a first "image of the original" as mentioned in col. 3, lines 56-60.);

Murakami does not teach the remaining limitations of a read roller and the reading means of claim 3 and does suggest various reading surfaces as mentioned in col. 4, line 55-63.

However, Yun, in the field of endeavor of document detection, teaches the remaining limitations of:

c) a read roller 5a8 of figure 6C placed opposite a photoelectric converting element 5a28 with said subject-copy-conveying path therebetween (A path for feeding the document is shown in figure 5A starting from numerals 5a2,5a4,5a20,5a8 and 5a26 and mentioned in col. 4, lines 39-48.) so as to keep a distance constant between said surface of said subject copy and said photoelectric converting element by revolving, a surface of the read roller functioning as a reference white used in a white-shading correction (Using fig. 6C, which is figure 5A with a cover 5a2 lowered, a white shading correction roller 5a8 (col. 5, lines 21-24) from the subject-copy-conveying path keeps a regular reading distance (col. 4, lines 49,50) as shown in fig. 6C between the covered document (not shown in fig. 6C, but is shown uncovered in fig. 5A as 5a26) and photoelectric converting element 5a28.);

d) reading means for reading a second image from a constant range on said surface of said read roller by using said photoelectric converting element.

(The CCD of fig. 6C, num. 5a28 is the reading means that reads the roller 5a8 that maintains a regular or constant reading distance (col. 4, line 49,50) to obtain image signals (col. 1, line 15-24) or a second image.)

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify the multiple plate teaching of Murakami with the teaching of Yun's roller teaching, because Yun's roller teaching provides for automatic feeding of multiple documents (Yun, col. 4, lines 46,47 and col. 5, line 54-56), thus the user does not have to scan multiple documents manually.

Regarding claim 6, the combination of Murakami and Yun teaches the image-reading device as claimed in claim 3, wherein said constant range is at least one round on said surface of said roller.

Yun states that, "CCD module 5a28 moves to position 6a6 in [FIG. 6C]...and scans white roller 5a8...(col. 5, lines 21-23)." Thus a roller 5a8 or one roller is being scanned on its round surface by the CCD 5a28.

Claims 11,12 and 13 are similar to claims 1,2 and 3,respectively, except for the limitation taught by Yun of:

wherein an image is formed on a sheet according to the image data of said first image.

Yun uses a printer 70 of fig. 4 to print copies when a document is being automatically fed of the first image or the read document images of 5a26 of fig. 5A as mentioned in col. 6, lines 57-63.

Claim 16 has been addressed in claim 3.

Claim 19 has been addressed in claim 6.

Claim 24 has been addressed in claim 11.

Claim 25 has been addressed in claim 12.

Claim 26 has been addressed in claim 13.

Claim 27 has been addressed in claim 1.

Claim 28 has been addressed in claims 3 and 6.

6. Claims 4,5,17,18 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami (US Patent 5,062,144 A) in view of Yun (US Patent 6,075,623 A) further in view of Kaneko (JP 401233874 A).

Regarding claim 4, Murakami does not teach the limitations of claim 4, but does suggest other variations for obtaining white reference data as mentioned in col. 4, lines 55-63.

However, Kaneko does teach claim 4 of an image-reading device, wherein a read roller 12 of figure 2 has a reference-white read surface 13 formed as a part of said surface thereof, the reference-white read surface 13 having a center of curvature on a straight line crossing a central axis as shown by the vertical line crossing thru numerals 11,10,8 and 12 to the center of read roller 12 of said read roller orthogonally so that said reference-white read surface is formed as a curved surface 13 located inside an outermost peripheral locus or located within the radius of the roller 12 of said read roller (Note that figure 4 shows other curved surface configurations 13).

Regarding claim 5, the combination of Murakami, Yun and Kaneko teaches the image-reading device as claimed in claim 4, wherein said constant range is at least one round on said surface of said read roller (Figure 2 of Murakami shows the one round of scanning Yun's white roller 5ab of figure 6c.), and a length R_A (figure 2 of Murakami) of each of said blocks labeled R_A and R_B (figure 2 of Murakami) in the sub-scanning "X" direction (figure 2 of Murakami) is smaller than a length of said reference-white read surface 3 of figure 2 of Murakami. Thus block R_A (figure 2 of Murakami) is smaller or half the size of the reference-white read surface 3 of fig. 2.

Claim 17 has been addressed in claim 4.

Claim 18 has been addressed in claim 5.

Claim 30 has been addressed in claims 3-6.

7. Claims 7,20 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami (US Patent 5,062,144 A) in view of Yun (US Patent 6,075,623 A) further in view of Munakata et al. (US Patent 6,217,143 B1).

Regarding claim 7, the combination of Yun and Murakami does not teach the limitations of claim 7, but does suggest scanning a document with a roller as mentioned in Yun, col. 2, lines 24-28.

However, Munakata et al., in the field of endeavor of document size detection, teaches an image-reading device, wherein a constant range is exceeding one round on a surface of a read roller (Munakata has shows a constant range or length "L" in fig. 23B that exceeds one round or turn of read

roller 1 of fig. 3 as mentioned in col. 7, lines 55-59 and col. 9, lines 44-48); and

Using figure 23B, a length "X" of each block shown by 2 vertical lines with a "X" between the lines in the sub-scanning direction "A" is so set that, when said constant range is divided as shown 6 times of fig.23 B into said blocks, a fractional block "J" as mentioned in col. 9, lines 56-60 or "FRACTIONAL RECORDING" is created in each round of said constant range (Multiple fractional recordings are shown that span across multiple rounds "X" as mentioned in col. 5, lines 11-18 that exceed one round of the roller 1 of fig. 3.)

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Yun's teaching of scanning with a roller with Munakata et al.'s teaching of fractional recording of a document, because Munakata et al.'s fractional recording method prevents deterioration of image quality (Munakata et al., col. 10, lines 26-30).

Claim 20 has been addressed in claim 7.

Claim 29 has been addressed in claims 3 and 7.

8. Claims 9,10,22,23,32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami (US Patent 5,062,144 A) in view of Yun (US Patent 6,075,623 A) further in view of Yamada et al. (US Patent 6,456,324 B1).

Regarding claims 9,22 and 32, Murakami and Yun teaches all the limitations in claims 1,14 and 27 except for a moving average, but does teach an average as discussed in claim 1. Thus, Murakami or Yun does not teach the limitation of moving.

However, Yamada et al., in the field of endeavor of image sensors, does teach a moving average as mentioned in col. 4, lines 1-12.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Murakami's teaching of an average with Yamada et al.'s moving average, because Yamada et al.'s teaching corrects an image's light quantity (Yamada et al., col. 4, lines 11,12).

Regarding claims 10,23 and 33, the combination of Murakami, Yun and Yamada et al. teaches the image-reading device as claimed in claim 1,14 and 27 wherein said averaging means obtains the moving averages by moving first lines (Using figure 32 of the Yamada et al. reference, a group of squares labeled s1 in the vertical direction on the left side is the first line.) of the respective sets (Three groups of vertical lines is the respective set that is labeled s1 in the vertical direction for the second line in the middle and the third line on the right side.) from each other by one line (The same set of lines shown relabeled s2, respectively, are captured again under different states and are placed 1 pixel width from the first line labeled s1 as mentioned in Yamada et al., from col. 1, line 63 to col. 2, line 31.)

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Kameyama (US Patent 6,295,140 B1) is pertinent as teaching a method of segmenting a white reference roller as shown in figure 9a and 9b.

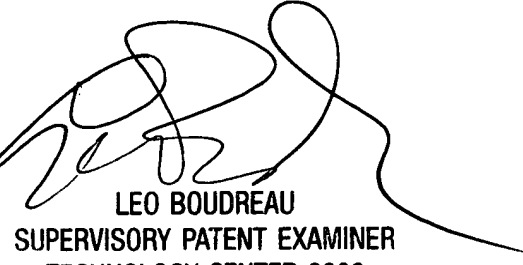
Arimoto et al. (US Patent 5,371,613 A) is pertinent as teaching a method of calculating averages in various regions of a scanned document using rollers for white reference data as shown in fig. 4.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dennis Rosario-Vasquez whose telephone number is 703-305-5431. The examiner can normally be reached on 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau can be reached on 703-305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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